

# **CHESAPEAKE HERITAGE**

**CONTEXTS FOR UNDERSTANDING BAY, COASTAL PLAIN, AND  
PIEDMONT NATURAL AND CULTURAL LANDSCAPES  
IN THE CHESAPEAKE BAY HEARTLAND**

The Chesapeake Bay Program

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## INTRODUCTION

### CHESAPEAKE BAY HERITAGE CONTEXTS:

#### A FRAMEWORK FOR UNDERSTANDING PAST AND PRESENT LANDSCAPES

#### *WHERE, WHAT, AND WHEN*

This book explores the cultural and natural heritages of the Chesapeake Bay heartland, a region that extends through parts of south central Pennsylvania, eastern Maryland and Virginia, and all of the District of Columbia (See Map 1). The area forms a large portion of the mid-Atlantic region of the United States. Today, one of America's densest concentrations of people live there, side by side with thousands of plant and animal species. This study focuses on the unique relationships between people, plants, animals, and place that have emerged at various times in the region's history.

The book moves from the earliest geological evidence of life in the Chesapeake Bay heartland - evidence that is at least 1.3 billion years old - to 1999. Over time, this region has been home to a fascinating diversity of natural and cultural landscapes. High mountain chains have risen over Chesapeake lands at least twice during the past billion years. Ocean waters and sluicing floods from melting glaciers have periodically flowed across the area. Hunting and gathering people first came to the region by 12,000 years ago. Native Americans began cultivating crops and settling in towns throughout the area around 1,000 years ago. First arriving less than 500 years ago, Europeans, and Africans first forcibly brought by them to the region in 1619, struggled to transform forests to farm fields during the colonial era between 1524 and 1775. Since then, social, political, economic, and technological developments in metallurgy, steam power, internal

combustion engines, chemical engineering, and, most recently, in electronics, have enabled people to transform regional environments in dramatic ways.

The heartland of this region stretches across the southernmost half of the 64,000 square mile Chesapeake drainage, a vast area bounded on the north by the headwaters of the Susquehanna River in southcentral New York, on the west by the Appalachian Mountain chain crests that cut across central Pennsylvania and West Virginia, and on the south by the upper tributaries of the James and other rivers that flow into the lowermost reaches of Chesapeake Bay.

The Chesapeake Bay heartland itself is bordered on the west by the Blue Ridge Mountains in Virginia and the Catocin Mountains in Maryland and Pennsylvania. A broken line of low hills running parallel to Pennsylvania's Kittatiny Mountains forms its northernmost border, and the elevated uplands separating the Delaware and Susquehanna river drainages forms its eastern border. The heartland's southern borders are in southeastern Virginia, marked by the headwaters of rivers and streams that flow north and east into the Bay's lowermost reaches.

This region contains three distinct, occasionally overlapping environmental areas often called physiographic provinces or ecosystems by specialists. These are the Bay itself, the coastal plain, and the Piedmont. Each is a unique and complex environment that both supports and is influenced by living things. The Bay environment consists of deep and shallow open salt waters and the brackish waters of the lower tidal portions of rivers. Chesapeake waters flow into the Atlantic Ocean at Hampton Roads at the Bay's southeastern end. The coastal plain bordering on the Bay consists of beaches, marshes, forests, and grasslands growing on generally sandy or gravelly soils. This area is often called the tidewater region, since the waters coursing along its shores rise and fall with the tide. Coastal plain sections on the Bay's eastern and southern shores



generally tend to be flat and are drained by salty or brackish waters. Bluffs and low rolling hills drained by brackish or freshwater streams are located on the western shore and in more interior parts of this region.

The Piedmont (literally “foot hills”) is a region of mixed hardwood forests and softwood barren-lands bordering on swift-running freshwater rivers and streams. Low mountain chains and isolated hills of hard rock resistant to eroding power of these waters rise above broad valleys covered by soft clayey soils. A low-lying ridge chain, known as the fall line, runs through the region from Conowingo Falls on the Susquehanna to Baltimore, Washington, and Richmond. The fall line separates the Piedmont uplands from the tidal lowlands of the coastal plain. Rapids flowing over this ridge line mark the uppermost limits of navigation for ships sailing up the region’s rivers. These distances vary from less than five miles on the Susquehanna to well over a hundred miles on the James.

The Susquehanna and James are only two of the more than fifty major rivers flowing through this region. Together, these rivers pour 2.5 million cubic feet of freshwater and huge amounts of sediments, minerals, and nutrients into Chesapeake Bay each year. Five of these rivers, the Susquehanna, Potomac, Rappahannock, York, and James, provide ninety percent of the Bay’s freshwater volume. The largest of these, the Susquehanna, accounts for fully half of the freshwater discharged into Chesapeake Bay. The huge volume of freshwater that flows into the Bay makes these waters ten percent less salty than those in the nearby open ocean.

The Bay itself is an estuary-a place where fresh river water mixes with salty ocean currents. It is the largest estuary in the United States and one of the largest in the world. The Bay was formed at the end of the last Ice-Age, when melting glaciers caused sea levels to rise

worldwide. This generally slender, shallow sliver of bay water stretches 200 miles from its northern border at the mouth of the Elk River in Maryland, to its southern outlet between Cape Henry and Cape Charles. Its deepest portions trace what in ancient times was the path of the Susquehanna River; its shallower parts were formed when land was flooded by rising ocean waters. As much as forty miles across at its widest point, Chesapeake Bay follows a generally narrow channel with an average width of between five and ten miles. Bay waters today cover a surface area of 2,500 square miles. Its waters have a mean low water volume of over 65,000 cubic yards and an average depth of twenty-three feet. They support an amazing variety of life. Deeper waters are home to many species of fish, shellfish, and, on occasion, visiting ocean fish and aquatic mammals. Vast meadows of submerged aquatic vegetation, great banks of clams and oysters, sizable populations of blue crabs, young fish not ready for the open water, migratory waterfowl, clouds of diatoms, dinoflagellates, and other plankton, and numerous species of fish, mammals, and birds make their homes in shallower Bay waters.

The coastal plain consists of beaches, saltwater and brackish marshes, freshwater swamps, a forests. The region straddles an environmental borderland marking the southernmost extent of many northern species and the most northerly limit of many southern plants and animals. Tidewater beaches support distinct communities of shellfish, insects, and migratory birds. Plants that are resistant to salt spray, including salt grass, saltmeadow cordgrass, and American holly provide food and shelter to a wide variety of insects, mammals, and birds and stabilize dunes and bluffs above the high tide mark, keeping them from eroding quickly into the Bay. Areas closest to the Bay are also home to lowlying salt marshes, which are flooded twice daily by tides. Plant communities dominated by saltmarsh cordgrass and other species able to withstand extended

periods of immersion live in these areas. In contrast, areas of salt marsh that only get covered by water at high tide are dominated by salt meadow cordgrass and other less water tolerant species. Just inland, common reeds, white perch, common snapping turtles, northern water snakes, great blue herons and other waterfowl, rice rats, and raccoons are among the many plants and animals making their homes in tidewater swamps and other brackish water wetlands.

Moving inland, we find freshwater marshes and swamps in places such as Virginia's Great Dismal Swamp that are homes to bald cypress, red maple, green ash, sweet gum, loblolly pine, poison ivy, giant water bugs, north black racers, bullfrogs, eastern mud turtle, barred owls, wood ducks, marsh rabbits, Virginia opossums, muskrats, river otters, beavers, and many other species. Farther in, coastal plain uplands are populated by diverse mixed hardwood and softwood forests. Each community reflects variations in local weather, water, and soil conditions.

The Chesapeake Piedmont is also a transition zone where species most commonly found in southern softwood forests blend in with plants that flourish in more northerly mixed softwood-hardwood forests. Three types of environment may be found in this area. Well drained mesosere zones located on level and mildly sloping terrain cover eighty-five percent of all Piedmont lands. Dry xerosere eroded and hilltop environments comprise ten percent of the land area. The remaining five percent of Piedmont land is made up of wet bottomland hydrosere habitats.

White oaks, beeches, hickories, tulip trees, and, until decimated by blight, chestnuts, dominate mature mesosere forest communities. Red oaks prosper in more northerly parts of the region; black oaks tend to be more common in southern sections. American hornbeam, flowering dogwood, blueberries, shadbush, and mapleleaf viburnum live in lower forest canopies. A wide variety of insects, amphibians, reptiles, birds, and mammals also make their homes in these forests.

Chestnut oak, red oak, flowering dogwood, dwarf chinquapin oak, and Virginia pine are the dominant trees in dry xerosere forests. Blackjack oak and, more rarely, arbor vitae, are found in extremely dry Piedmont barrenlands. Blueberries, mountain laurel, and a variety of shrubs and grass grow in upland xeric habitats. A relatively small number of animal species adapted to drier and harsher conditions make their homes in this zone.

Silver maple, sycamore, bitternut hickory, swamp white oak, hornbeam, box elder, hackberry, sweet gum, green ash, river birch, and, formerly, the American elm, dominate forests growing along the banks of Piedmont swamps and streams. Paw paw, poison ivy, wild grape, wild azalea, witch hazel, and spicebush thrive on the forest floors in this zone. In contrast to its other habitats, Piedmont wetlands support some of the largest communities of insects, crustaceans, mollusks, fish, amphibians, reptiles, birds, and mammals in the Chesapeake region.

### *WHY*

The main purpose of this book is to give readers accurate, up to date, and easy to understand information on the natural and cultural heritages of the Chesapeake Bay heartland. Although the Chesapeake Bay is one of the most intensively studied regions in the United States, basic information about the area is still hard to find. Many thousands of specialized publications touch on just about every conceivable aspect of the Bay heartland's natural and cultural resources, and thousands of other reports - many unpublished and most hard to find - contain technical findings from studies commissioned by private corporations, public interest groups, government agencies, and other organizations. Add to this the ever increasing numbers of web sites that offer information on everything from water pollution levels to deep surface geology. Yet much of this

material is presented in dense, technical terms, and readers may find it difficult to tell which findings are dependable and which are controversial or out of date. And no one source presents information on the region's cultural and natural resources in a systematic framework.

For more than a year, an innovative partnership has worked together to fill this gap. This partnership combines the knowledge, skills, and resources of federal and state agencies, academic institutions, public and private organizations, and interested individuals. In creating this book, project partners have worked to achieve three goals: to offer accurate, up to date information on the natural and cultural resources of the Chesapeake Bay heartland, to present these findings in nontechnical language, to organize this information in ways that reveal how a complex ever changing web of relationships connects all of the region's natural and cultural resources.

Culture is simply the way people live, and nature is what we need to thrive and survive. Cultural and natural heritage is everyone's concern. By investigating our cultural and natural landscapes, we can see how our lives depend on an ever changing kaleidoscope of links connecting the past to the present. When we understand these connections between culture and nature, past and present, we can make better decisions about whether to change things or to keep them as they are.

By providing the latest, most accurate information in plain language, this book aims to provide a sound basis for such decisions. It is meant to assist anyone living in or concerned about the Chesapeake Bay region. General readers seeking basic information and specialists looking for succinct summaries can find useful data and suggested sources in these pages. Developers seeking for ways to avoid past mistakes and enhance potential project values can find useful information here. And State Historic Preservation Office employees using state historic contexts can use this study to place information about properties in state borders within a more comparative broader

regional perspective. As this is a government report funded by tax dollars, its text may be freely used or adapted for brochures, newsletters, and other publications.

### *HOW*

This study combines two National Park Service organizational frameworks, the Historic Context and the National Historic Landmark Thematic Framework, to help readers find information. The historic context is a method that state agencies use to organize and assess the information they need to identify, evaluate, designate, and manage cultural resources such as buildings, sites, and structures that are associated with particular aspects of American history and culture. The National Historic Landmark thematic framework is a system used nationwide to gather and organize information on America's most significant historic sites.

Both systems have been modified and combined to create the Heritage Context framework developed especially for this project. Chesapeake Bay heritage contexts document relationships between cultural and natural resources during particular periods. Each heritage context—one of which comprises each chapter of this book—summarizes basic information for the period. You will see boxed insets in each chapter that highlight places chosen to represent natural and cultural landscapes of particular periods. Also in each chapter you will find reliable lists of sources (with locations) for further information.

Using adaptations of historic context frameworks used by State Historic Preservation Offices of Delaware, Maryland, Pennsylvania, Virginia, and the District of Columbia, this study divides information on the Chesapeake Bay region into these chronological heritage contexts:

The Deep Past, 1.3 Billion to 18,000 Years Ago

Paleoindian Life in the Chesapeake Region, 18,000 to 9,900 Years Ago

Hunting and Gathering Lifeways in the Chesapeake Region, 10,000 to 1,000 Years Ago

The Rise of Townlife, 1,100 to 500 Years Ago

Contact and Colonization, A.D. 1500 to 1775

The Early Republic, 1775 to 1820

Sectional Strife, 1820 to 1880

Urbanization, 1880 to 1930

Chesapeake Metropolis, 1930 to 1999

Each heritage context - each chapter in this book - begins with outlines of the period's major developments and events. These are followed by overviews of relationships between people and place during the period. The first chapter, The Deep Past, focuses on the 1.3 billion years of history preceding the initial human entry into the region sometime between 18,000 and 11,500 years ago. Place precedes people in the next three chapters, highlighting what an enormous influence environmental conditions had on people's actions in the region from the time of their first arrival until about five hundred years ago. This order is reversed, with people coming before place, in the final five chapters, reflecting the rise of attitudes and capabilities that allowed and encouraged many people to dominate and exploit Chesapeake Bay environments.

Each discussion of place begins with a general description of conditions in each of the Chesapeake Bay region's three major environmental areas. It continues by assessing the status of major components of each region's environment. These include its rocks, minerals, soils, and other geological features, its salt and fresh waters, and its climate, weather, plants, and animals.

Each discussion of people begins with a general look at cultural developments in the particular period. It places events against the broader backdrop of national and international developments. And it charts, evaluates, and explains key cultural factors of each period, including changes in the number and location of human inhabitants; its social, political, and economic life; and its technological and intellectual developments

These discussions are followed by more detailed looks at key aspects of the period's cultural and natural landscapes. Slightly modified for this study, the National Historic Landmark thematic framework is used to present specific information relating to these eight key aspects for all but the first period:

#### Peopling Places

Creation of Social Institutions

Expressing Cultural Values

Shaping the Political Landscape

Developing the Chesapeake Economy

Expanding Science and Technology

Transforming the Environment

Changing Role of the Chesapeake in the World Community



In this study, the word ecology is used to refer to the relationships of living things with one another and with their environments. The word landscape refers to those ecological relationships that occur between people and their environment. The phrase natural landscape refers to ecologies independent of human interference or influence. The term cultural landscape refers here to the combination of cultural and natural factors that forms unique ecologies of people and place. This definition acknowledges the role that culture plays in linking human and natural worlds.

Cultural landscapes can be as large as river valleys and as small as farmsteads. But whether situated in a single locale or spread over a wide areas, each reflects unique relationships between natural conditions and cultural activities. Cultural landscapes are transformed over time, with only fragments of earlier cultural landscapes surviving in later periods. These fragments become components of later ecologies, whether as relics or reusable resources. Well preserved fragments of cultural landscapes of the past - usually linked with significant people or events - may gain importance far beyond their specific cultural landscape.

Natural resources, too, survive as remnants of past cultural landscapes. This study employs the terms geology, water, climate, plants, and animals to describe these natural resources. Geology includes rocks, minerals, and soils. Water includes both salt and fresh waters. Climate includes the atmosphere and weather. Plants includes water and land plants and relatives such as fungi and microscopic phytoplankton. And finally, animals includes microscopic zooplankton; larger invertebrates, such as worms, shellfish, mollusks, and crustaceans; insects, fishes; reptiles and amphibians; birds; and mammals.

Each chapter examines all of these factors - history, habitats, natural and cultural landscapes, and natural resources - in sections on the eight key aspects listed above. Peopling

Places assesses how changes and continuities in population patterns affect each period's natural and cultural landscapes. It focuses on natural and cultural features associated with migration, health status, culture, ethnicity, gender, and other aspects of identity. Such features can include archeological sites containing artifacts, settlement patterns associated with particular cultures, and specific combinations of architectural styles and land use patterns that reveal the immigration or emigration of specific ethnic groups.

Creation of Social Institutions and Movements charts how public and private associations expressed themselves in the region's landscape. Sites such as ball fields and memorials; buildings such as clubhouses, churches, and schools; and districts such as Colonial Williamsburg, can provide examples of social aspects of a period's cultural and natural landscape.

Expressing Cultural Values examines the ways beliefs and values are expressed when a culture interacts with its natural landscape. These expressions can include sites of high culture, such as temples, museums, formal parks, and places associated with prominent figures in arts and letters, as well as sites of popular culture, such as amusement parks, music halls, and the homes of primitive painters.

Shaping the Political Landscape examines the particular impressions that government makes on a period's landscape. Political properties range from council rings, city halls, and political clubhouses to military fortifications, battlefields, and places associated with important political figures and movements.

Developing the Chesapeake Economy examines the impact of work on the landscape. Places associated with this include quarries, factories, and other locales for resource extraction and production; paths, turnpikes, railroads, canals, and other transportation facilities; warehouses,

stores, and other places of distribution; banks, stocks exchanges, and other financial institutions; and union halls and other properties associated with American labor.

Expanding Science and Technology assesses the impacts of innovation upon the land. Places associated with this include buildings used in technological development, such as workshops, laboratories, and institutes of higher learning; sites associated with first, final, or exemplary examples of major industries; and ships, aircraft, and other objects exemplifying scientific and technological advances.

Transforming the Environment considers natural and cultural aspects of the landscape that influence environmental change during a particular period. Places where these forces come together include locales where the environment is exploited, degraded, maintained, or restored.

Finally, Changing Role of the Chesapeake in the World Community considers the roles of ports, customs facilities, and similar points of contact with the wider world, as well as the impacts of products and ideas originating beyond the borders of the landscape under discussion.

Each chapter also contains lists of locales that preserve significant surviving aspects of the cultural and natural landscapes of the period that have been recognized by the federal government for their national significance. Each chapter then ends with a section listing print, film, and electronic sources of additional information.

Appendices at the end of the volume contain a regional time line, a list of list common and scientific names of major plants and animals in the region, and listings of regional National Natural Landmarks and National Parks. These are followed by a source section listing bibliographic resources, State Historic Preservation Office historic contexts, useful films, databases, and web sites.